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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/811,835

03/30/2004

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EXAMINER

ROSSOSHEK, YELENA

ART UNIT

PAPER NUMBER

2825

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/811,835	Applicant(s) GOTO ET AL.	
	Examiner HELEN ROSSOSHEK	Art Unit 2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 6-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 10-13 is/are rejected.
- 7) ☒ Claim(s) 4,5,14,15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the Application 10/811,835 filed 03/30/2004 and amendment filed 03/11/2008.

2. Claims 1-15 remain pending in the Application. Claims 1-5, 10-15 are under consideration. Claims 6-9 are withdrawn from consideration. It has to be noted that claims 6-9 should be marked as "Withdrawn" in the Applicant's amendment (claims).

3. Applicant's arguments have been fully considered but they are not persuasive.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3, 10-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Solomon et al. (US Patent 6,446,248).

With respect to claim 1 Solomon et al. teaches a method of designing a circuit layout of a semiconductor integrated circuit (abstract), comprising:

designing a logic function of the integrated circuit within inserting a standard cells as shown on the Fig. 4 (col. 7, ll.20-21), wherein during integrated circuit design standard cells are pre-designed and configured to perform a predetermined function (col. 4, ll.64-65);

designing a pattern layout of the integrated circuit so that the pattern layout includes a logic cell area and an open area as shown on the Fig. 4, wherein integrated

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circuit layout includes logic cells (standard cells) to determine the function of the integrated circuit and unused areas (open) 401, 402, 403, 404, 405, 406 (col. 7, ll.19-21);

providing a spare underground cell having no interconnect patterns and contacts (within base cells 245 shown on the Fig. 3A, wherein base cell 245 includes plurality of transistors that have unconnected terminals (no interconnect patterns and contacts) (col. 5, ll.10-16));

inserting the spare underground cell into the open area, wherein the spare underground cell includes a functional element (within inserting base cells 245 into the circuit design layout into unused area in the circuit design layout (col. 7, ll.9-12), wherein base cell 245 implemented with different types of functional elements, such as different types of transistors and their combinations (col. 7, ll.37-46)); and

designing a mask layout of the integrated circuit, the mask layout including the logic cell and the spare underground cell (within fabrication stage/masking of the integrated circuit design, wherein the integrated circuit layout includes logic/standard cells 235 and spare underground/base cells 245 (col. 6, ll.43-47)).

With respect to claim 10 Solomon et al. teaches limitations similar to the limitations of the claim 1 including plurality of logic cells and plurality of spare underground cells in the integrated circuit layout design as shown on the Figs. 2, 4 (col. 6, ll.43-47).

With respect to claims 2-5, 11-15 Solomon et al. teaches:

Claims 2, 11: wherein the functional element includes a D flip-flop, an inverter, a NOR circuit, a NAND circuit an exclusive OR circuit and a latch circuit (col. 5, ll.14-16);

Claims 3, 13: wherein inserting the spare underground cell includes:

dividing the pattern layout into a plurality of block regions (within partitioning the layout of the integrated circuit into blocks as shown on the Fig. 4 (col. 2, ll.50-51);

searching the open area from the block regions by searching and extracting empty spaces, i.e. unused by standard cells (col. 4, ll.23-24));

distributing the open area into the block regions (col. 7, ll.21-22); and

inserting the spare underground cell into the distributed open area (using area-based placement routing tool for placing ponds of gates (POGs) 411-416 as shown on the Fig. 4A (col. 7, ll.25-26), wherein POGs are sets of base cells (spare) (col. 7, ll.28-29));

Claim 12: wherein each of the spare underground cells has a same kind of the functional elements (col. 5, ll.14-16; col. 7, ll.37-46).

Allowable Subject Matter

6. Claims 4, 5, 14 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of record does not teach setting a flag when all inserting within the attended block region are finished among with all limitations of the claims 4 and 14 and claims 1 and 10, from which they depend.

Remarks

7. In remarks Applicant argues in substance:

a) Solomon et al. fails to disclose that the base cell 245 has no interconnect patterns and contacts as claimed

b) For anticipation under 35 USC § 102, the reference must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present (MPEP 706.02). Since each and every element, as set forth in the claims are not found either expressly or inherently described as required by MPEP, Solomon et al. cannot be said to anticipate the invention as claimed.

8. Examiner respectfully disagrees for the following reasons:

With respect to a) Solomon et al. teaches base cells 245 as shown on the Fig. 3A, wherein architecture of the base cell 245 depicted as plurality of **unconnected transistors**, wherein no interconnect patterns and contacts are shown, since each base cell 245 includes transistors that have **unconnected terminals** (col. 5, ll.10-16). Therefore Examiner believes that the term in the claims 1 and 10 “spare underground cell having no interconnect patterns and contacts” is equivalent to having **unconnected terminals** of the transistors of base cell 245 (col. 5, ll.10-11).

It has to be noted that Applicant's representative cited description of the Fig. 3B, which is a physical layout of the base cell 245 and discloses further as a next stage: process of fabricating stage of the integrated circuit including base cell, wherein Solomon et al. teaches fabrication stage of the integrated circuit design layout including adding metal layers 1 and 2 to the base cell 245 layout, which shown on the Fig. 3B.

With respect to b) it has to be noted that Solomon et al. teaches every element and step claims 1-3, 10-13 in the instant Application. Therefore Examiner maintains aforementioned rejection of claims 1-3, 10-13 under 35 USC § 102 since Solomon et al. reads instant claims as currently written.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HELEN ROSSOSHEK whose telephone number is (571)272-1905. The examiner can normally be reached on 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on 571-272-7483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HR
05/16/2008

/Helen Rossoshek/
Primary Examiner, Art Unit 2825